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MEMORANDUM 2006-2

To: All Indiana Oil and Gas Operators

From: Herschel McDivitt, Director

Date: May 24, 2006

Subject: Use of Nitrogen for Conducting Mechanical Integrity Tests (MIT's)

As most of you know, the use of nitrogen to pressure up the annulus of a well to conduct mechanical integrity was an approved division policy until 2003. The policy was withdrawn at that time after reviewing the manner in which many operators were conducting mechanical integrity for operation of their Class II wells or when seeking temporary abandonment of an inactive well. In some situations, nitrogen was being used improperly for purposes of meeting the mechanical integrity requirements.

The use of nitrogen should be limited only to inducing pressure on the casing or casing/tubing annulus. It must not be the substance used to actually fill the annular space in preparation for the test. Our existing rules at 312 IAC 16-5-15 (b)2 and (c), contain the following requirements for conducting mechanical integrity tests on Class II wells:

(b)(2) *Pressure testing with liquid.*

(c) Where pressure testing is performed under subsection (b)(2), the casing-tubing annulus above the packer must be filled with fluid and tested, with no more than a three percent (3%) pressure differential over a thirty (30) minute period, not less than once every five (5) years under the supervision of a division representative at a pressure of no less than three hundred (300) pounds per square inch.

With respect to conducting pressure tests for temporary abandonment or plugging deferral, 312 IAC 16-5-20-2 (iii) & (iv) states the following:

(iii) Set a mechanical bridge, cement, or calseal plug within two hundred (200) feet above the perforated or open hole interval in the cemented portion of the casing, but no less than one hundred (100) feet below the base of the lowest underground source of drinking water. Pressure test the casing at least once every five (5) years during any period of temporary abandonment by filling the casing above the mechanical bridge, cement, or calseal plug with water and placing a pressure of at least three hundred (300) pounds per square inch gauge (which may vary no more than three percent (3%)) for a period of thirty (30) minutes. During the thirty (30) minute period of the test, additional pressure may not be applied to the casing.

(iv) Install tubing and packer within two hundred (200) feet above the perforated or open hole interval in cemented portion of the casing, but no less than one hundred (100) feet below the base of the lowest underground source of drinking water. Pressure test the casing tubing annulus at least once every five (5) years during any period of temporary abandonment by filling the annulus above the packer with water and placing a pressure of at least three hundred (300) pounds per square inch gauge (which may vary no more than three percent (3%)) for a period of thirty (30) minutes. During the thirty (30) minute period of the test, additional pressure may not be applied to the annulus.

Effective immediately, operators may begin the use of nitrogen to induce pressure on the casing or casing/tubing annulus for demonstration of mechanical integrity provided the testing otherwise complies with the above rules, and the following:

1. The operator is limited to the use of one (1), 230 cubic foot bottle or tank per MIT.
2. The operator shall provide the inspector with documentation, such as a tubing tally, showing the depth of packer placement in the well to be tested.
3. Where suitable documentation of packer depth cannot be provided, the inspector may require the use of water to induce pressure instead of nitrogen.

Questions regarding this document can be directed to Kevin York, kyork@dnr.in.gov, phone (812) 853-8640, Jim AmRhein, jamrhein@dnr.in.gov, phone (317) 232-6961 or to me, hmcdivitt@dnr.in.gov, phone (317) 232-4058.